PHYSICS Name :

Activity - *Fact or Fiction?*

Problem: To investigate the principles of projectile motion; to apply critical analysis and problem solving skills to analyze a movie clip.

Materials: Speed (the video)
other materials as needed

Discussion: Watch the clip from the movie Speed where the bus jumps from one highway roadbed to another because the road has not been completed yet. Rewind the clip and watch it again trying to pick up any details that you notice on the screen. Keep in mind all that you have learned about projectile motion. Record your observations. As a class, answer the following questions (you may need to review the video clip from time to time:

Questions: 1.) What is the approximate weight of the bus? What reasoning do you have to back this up? What is it's mass in kilograms?

2.) How fast is the bus going in mph? in m/s?

3.) What do you know about the horizontal speed of a projectile? What assumptions are you making?

4.) What do you know about the vertical speed of a projectile? What assumptions are you making?

5.) Estimate how far the bus goes horizontally in meters.

6.) Estimate how far the bus drops vertically in meters.

7.) Is it possible to time the bus while in the air? Explain.

8.) Can you assume the launch angle to be 0°? If not estimate reasonable value for it.

9.) Using the data above determine whether or not the stunt was real.

10.) What error was involved in your analysis? How would it effect your results?

Conclusions:

What did you accomplish? What did you learn? Can you conclude anything about the physics of movie making?